# VTT001 and VTR001
Twisted Pair Transmitter and Receiver

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚠, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, **www.extron.com**.

Instructions de sécurité • Français

avertissement: Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur la présence à l'intérieur du boîtier du produit d'une tension électrique dangereuse susceptible de provoquer un choc électrique.

ATTENTION: Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, **www.extron.fr**.

Sicherheitsanweisungen • Deutsch

WARNUNG: Dieses Symbol ⚠ auf dem Produkt soll den Benutzer darauf aufmerksam machen, dass im Inneren des Gehäuses dieses Produktes gefährliche Spannungen herrschen, die nicht isoliert sind und die einen elektrischen Schlag verursachen können.

VORSICHT: Dieses Symbol ⚠ auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Weitere Informationen über die Sicherheitsrichtlinien, Produkthandhabung, EMI/EMF-Kompatibilität, Zugänglichkeit und verwandte Themen finden Sie in den Extron-Richtlinien für Sicherheit und Handhabung (Artikelnummer 68-290-01) auf der Extron-Website, **www.extron.de**.

Instrucciones de seguridad • Español

ADVERTENCIA: Este símbolo, ⚠, cuando se utiliza en el producto, avisa al usuario de la presencia de voltaje peligroso sin aislar dentro del producto, lo que puede representar un riesgo de descarga eléctrica.

ATENCIÓN: Este símbolo, ⚠, cuando se utiliza en el producto, avisa al usuario de la presencia de importantes instrucciones de uso y mantenimiento recogidas en la documentación proporcionada con el equipo.

Para obtener información sobre directrices de seguridad, cumplimiento de normativas, compatibilidad electromagnética, accesibilidad y temas relacionados, consulte la Guía de cumplimiento de normativas y seguridad de Extron, referencia 68-290-01, en el sitio Web de Extron, **www.extron.es**.

Chinese Simplified（简体中文）

警告：⚠产品上的这个标志意在警告用户该产品机壳内有暴露的危险电压，有触电危险。

注意：⚠ 产品上的这个标志意在提示用户设备随附的用户手册中有重要的操作和维护(维修) 说明。

关于我们产品的安全指南、遵循的规范、EMI/EMF 的兼容性、无障碍使用的特性等相关内容，敬请访问 Extron 网站 **www.extron.com**，参见 Extron 安全规范指南，产品编号 68-290-01。

Chinese Traditional（繁體中文）

警告: ⚠若產品上使用此符號，是為了提醒使用者，產品機殼內存在著可能會導致觸電之風險的未絕緣危險電壓。

注意 ⚠ 若產品上使用此符號，是為了提醒使用者。

有關安全性指導方針、法規遵守、EMI/EMF 相容性、存取範圍和相關主題的詳細資訊，請瀏覽 Extron 網站：**www.extron.com**，然後參閱《Extron 安全性與法規遵守手冊》，準則編號 68-290-01。

Japanese

警告: この記号 ⚠ が製品上に表示されている場合は、筐体内に絶縁されていない高電圧が流れ、感電の危険があることを示しています。

注意: この記号 ⚠ が製品上に表示されている場合は、本機の取扱説明書に記載されている重要な操作と保守(整備)の指示についてユーザーの**注意**を喚起するものです。

安全上のご注意、法規厳守、EMI/EMF適合性、その他の関連項目については、エクストロンのウェブサイト**www.extron.com**より『Extron Safety and Regulatory Compliance Guide』(P/N 68-290-01) をご覧ください。

Korean

경고: 이 기호 ⚠, 가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

주의: 이 기호 ⚠, 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(**www.extron.com**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference; the user must correct the interference at his own expense.

> **NOTE:** This unit was tested with shielded I/O cables on the peripheral devices. Shielded cables must be used to ensure compliance with FCC emissions limits.
>
> For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the "**Extron Safety and Regulatory Compliance Guide**" on the Extron website.

Specifications Availability

Product specifications are available on the Extron website, **www.extron.com**.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: A warning indicates a situation that has the **potential** to result in death or severe injury.

CAUTION: A caution indicates a situation that **may** result in minor injury.

NOTE: A note draws attention to important information.

Contents

Introduction

The Extron VTT001 Twisted Pair (TP) Transmitter Series and VTR001 Twisted Pair Receiver Series provide a system for sending VGA, RGBHV, ansd RGBS signals up to 500 feet (150 meters) over Extron Skew-Free AV UTP cable. They can also send these signals over CAT 5/5e/6 shielded twisted pair (STP), unshielded twisted pair (UTP), or foil shielded twisted pair (FTP) cable.

Both transmitter and receiver have remote power capability. For transmission distances up to 300 feet, the applied power is required at either the transmitter or the receiver. Greater distances require power to be applied locally to both transmitter and receiver.

Depending on the model, both transmitter and receiver modules may be mounted in a wall, a rack, or in other Extron products that accept a double-sized MAAP panel (such as CPM101, CPM200, and CPM112R), or Extron AAP mounting products; or they may be set on a tabletop. The MAAP model comes in a black finish; the AAP model comes in a white finish; and the tabletop model comes in a black finish.

The following table specifies the maximum recommended transmission distances for the VTT001/VTR001 pair with a signal at 60 Hz.

Video Resolution	Recommended Maximum Range
640 x 480	500 feet
800 x 600	400 feet
1024 x 768*	300 feet
1280 x 960*	200 feet
1280 x 1024*	200 feet
1360 x 765	200 feet
1365 x 768	200 feet
1366 x 768	200 feet
1440 x 900	200 feet
1440 x 1050	200 feet
1600 x 1200*	150 feet
NOTE: Video resolutions marked with an asterisk (*) have the same range specification at 75 Hz.	

NOTES: • Extron recommends using at least 50 feet of TP cable between the transmitter and the receiver.

• It is possible to exceed the recommended distances. However, image quality may be reduced.

Features

- **Video sharpness control** — Optimizes the video image for different cable lengths between transmitter and receiver.

- **Removable faceplate** — The module faceplate may be removed for tabletop use or attachment to an equipment rack.

- **Compatibility** — The VTR001 receiver also functions as the receiver for output from the Extron IN1404XT video scaler, Extron TP T 15HD A, TP T 15HD AV, TP T BNC, TP T 15HD 45, TPX 88, TPX 88 A, and TP T BNC DA4.

- **Remote power capability** — Both transmitter and receiver can be powered remotely when cable runs are 300 feet or less.

Installation

The Installation section describes:

- • **Rear Panel Connectors**
- • **Front Panel Connector and Indicator**
- • **Cabling and Setup**

Rear Panel Connectors
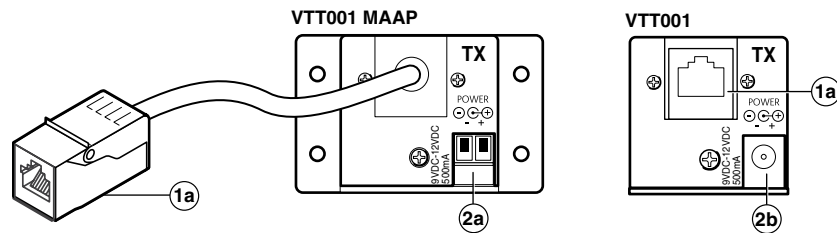
Figure 1.   VTT001 MAAP and VTT001 Rear Panel Views

NOTE: The VTT001 MAAP and VTT001 models differ in how they are mounted (see **Mounting** on page 10).
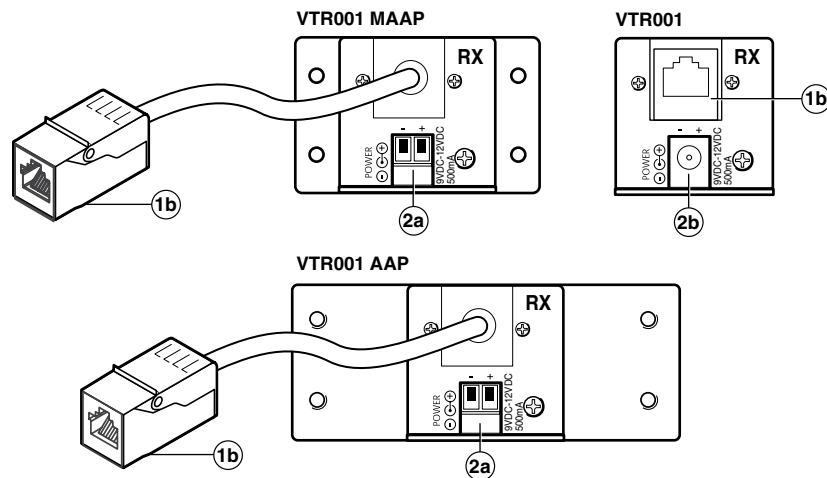
Figure 2.   VTR001 MAAP, VTR001, and VTR001 AAP Rear Panel Views

NOTE: The VTR001 MAAP, VTR001 AAP, and VTR001 models differ in how they are mounted (see **Mounting** on page 10).

①ₐ **Transmitter output connector** — A female RJ-45 connector on a 3 inch pigtail for the VTT001 MAAP, or within the VTT001 model. Plug the twisted pair cable going to the receiver into this connector.

> **CAUTION:** Do not connect the transmitter to a computer data or telecommunications network.

①ᵦ **Receiver input connector** — A female RJ-45 connector on a 3 inch pigtail for the VTR001 MAAP and VTR001 AAP models, or within the VTR001 model. Plug the twisted pair cable coming from the transmitter into this connector.

> **CAUTION:** Do not connect the receiver to a computer data or telecommunications network.

②ₐ **Captive screw input power connector** — Connect the included 12 VDC external power supply to the 2-pole female direct insertion captive screw connector. The VTT001 MAAP, VTR001 AAP, and the VTR001 MAAP have this captive screw connector.

Power Connection

Power
12VDC
– +

TX
POWER

A   A

Power Supply
Output cord

SECTION A–A
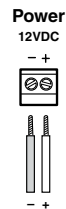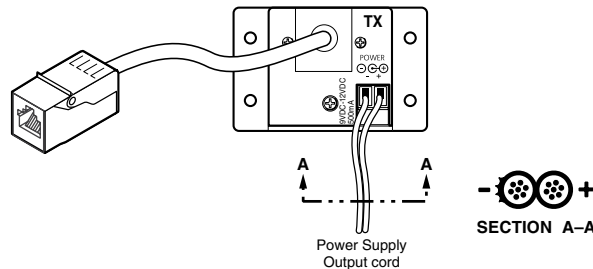
> **CAUTIONS:** • Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
>
> • Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium or desk.
>
> • The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.

To verify correct polarity before connection, check the power supply no load output with a voltmeter.

> **WARNING:** **May result in serious injury**.
> The two power supply leads must be kept separated while the power supply is plugged into an electrical outlet. Remove power before wiring.

NOTE: Both transmitter and receiver have remote power capability. For transmission distances up to 300 feet, the power is required only at either the transmitter or the receiver. Greater distances will require power to be applied to both transmitter and receiver.

②b **Power input jack** — Connect the included 12 VDC external power supply to this female jack. The VTT001 and the VTR001 use this power input connector (see the note, cautions, and warning for ②a above).

The male power plug that connects to this input jack is shown below.

Power plug

Tip (+)   Sleeve   Tip (+)

Sleeve
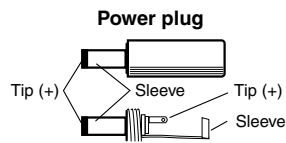
Front Panel Connector and Indicator
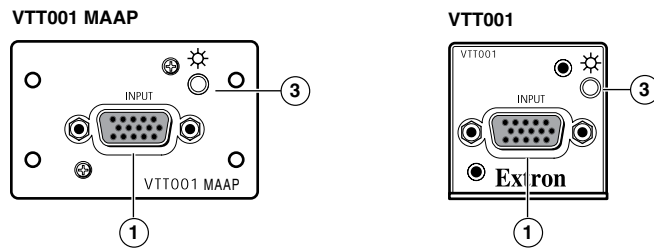
Figure 3. VTT001 MAAP and VTT001 Front Panel Views
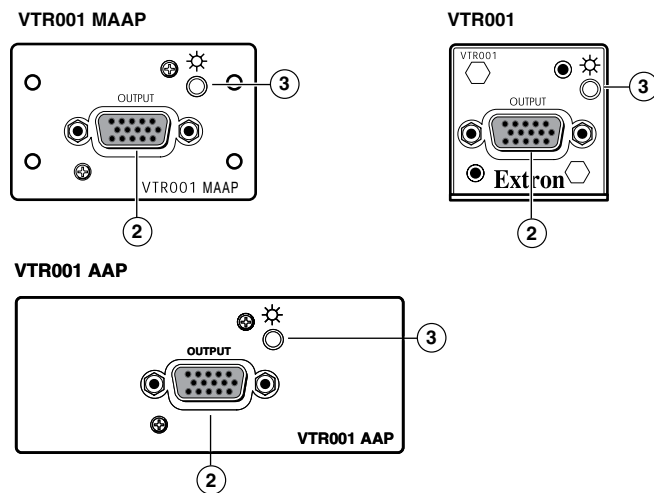
Figure 4. VTR001 MAAP, VTR001, and VTR001 AAP Front Panel Views

> **NOTE:** The VTR001 MAAP, VTR001 AAP, and VTR001 models differ in how they are mounted. The AAP version has a larger faceplate than the VTR001 MAAP.

① **Transmitter video input connector** — A female 15-pin HD VGA input for all models. Plug an RGBHV/RGBS video signal source into this connector.

② **Receiver video output connector** — A female 15-pin HD VGA connector for all models. Connect a monitor, LCD projector, or other display device to output an RGBHV or RGBS video signal.

③ **Power LED indicator** — The LED lights green whenever power is applied.

Cabling and Setup

To install the VTT001 MAAP and VTT001 models and the VTR001 MAAP, VTR001 AAP, and VTR001 models, follow these steps:

1. Turn all of the equipment off and, if applicable, disconnect it from the power source.

2. Connect the RJ-45 connectors of the transmitter and receiver to either end of the twisted pair cable (see **Cable Testing** on page 8 and **Equalizing Pair Skew** on page 9).

> **NOTE:** RJ-45 termination must comply with the TIA/EIA T568A or TIA/EIA T568B wiring standards for all connections, as shown below.

Pins:
12345678

Pin	TIA/EIA T568A Wire color	TIA/EIA T568B Wire color	RGB Video Signal
1	White-green	White-orange	Red/V. sync +
2	Green	Orange	Red/V. sync -
3	White-orange	White-green	Power
4	Blue	Blue	Green +
5	White-blue	White-blue	Green -
6	Orange	Green	Power
7	White-brown	White-brown	Blue/H. sync +
8	Brown	Brown	Blue/H. sync -

1&2   7&8
3&6   4&5
Twisted Pairs (4)
RJ-45
Connector

Figure 5.   RJ-45 Pin Terminations

> **NOTES:** • For best results, use Extron Skew-Free AV UTP cable, available in bulk or in various pre-terminated lengths. If necessary, regular CAT 5 cable may be used. CAT 5e and CAT 6 cables are not recommended.
>
> • If you are using Enhanced Skew-Free AV cable, use the TIA/EIA T-568-A standard only.

3. Connect the external power supply to the transmitter, the receiver, or both. Both transmitter and receiver have remote pow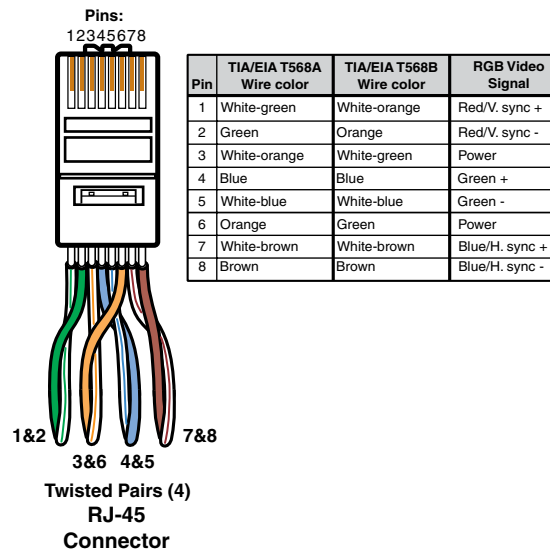er capability. For transmission distances up to 300 feet, the applied power is only required at either the transmitter or the receiver. Greater distances require power to be applied locally to both transmitter and receiver.

4. Connect an output display device to the 15-pin HD video output connector of the receiver.

5. Connect a RGBHV/RGBS video source to the 15-pin HD video input connector of the transmitter.

6. Power up the video input and output devices, then apply power to the power supply and test for the display output. Adjust the sharpness, if necessary (see **Sharpness Adjustment** on page 9). If a problem is encountered, check all connections before proceeding further.

7. If the previous display test was successful, power off and disconnect all equipment, detach all cables, and install the mountable transmitter or receiver (see **Mounting** on page 10).

> **NOTE:** If the transmitter or receiver is to be wall mounted and the power supply will be inaccessible, power must be applied to the power supply before final mounting.

Compatibilty with Other Extron Products

The VTT001 series and VTR001 series products can communicate with other Extron products. The following tables indicate how the products interact.

	TP T 15HD A	TP T 15HD AV	TP T BNC	TP T BNC DA4	TP T AV	TP T 460	TP T 468	IN1404XT	TP T 15HD 45
VTR001 series	A	A	A	A	B	A	A	A	A

	TP R BNC AV	TP R BNC A	TP R AV	TP R 15HD A
VTT001 series	A	A	B	A

A = RGB video only
B = incompatible

> **NOTE:** The VTT001 series and VTR001 series will not power the compatible Extron products remotely.

Cable Testing

To ensure proper cable termination, each transmission cable system that uses CAT 5e or CAT 6 cable should be tested (Extron Skew-Free AV UTP cable does not need to be tested). Testing the cable from the RJ-45 connections at the transmitter and receiver gives the most accurate indications of cable problems.

There are two varieties of cable runs: simple runs, in which a single cable is terminated only at the transmitter and receiver; and complex runs, which can include patch bays and multiple terminations and lengths of cable. In either case, the entire cabling system should be tested.

A complete test measures cable length and tests the wire map, attenuation, NEXT, PSNEXT, ELFEXT, PSELFEXT, return loss, ACR and PSACR. All of these tests are critical for digital data transfer. While all of these tests are important indicators of the quality of the cable termination, the most critical testing parameters for video transfer are wire map (T568A or T568B termination) and pair length measurements. The largest concern is equalization of skew between cable pairs. Cable systems of 300 feet or less should exhibit no transmission problems if they pass at least CAT 5e or preferably CAT 6-D5 channel certification testing.

The Microtest® OMNI SCANNER™ 2 performs comprehensive certification testing to the proposed CAT 6 standards. Other manufacturers also make testing equipment. The tests include advanced diagnostics for troubleshooting the cause and location of many cable and termination problems. For simple installation testing, the Microtest MICRO SCANNER PRO tests wire map and cable length, including individual cable pair length.

Equalizing Pair Skew

Pair skew issues are eliminated when you use Extron Skew-Free AV UTP cables.

The manufacturing process for CAT 5e or CAT 6 network UTP cable leads to a condition called pair skew. For best results, pair skew needs to be equalized when using the CAT 5e or CAT 6 cable in AV applications. The design of the Extron Skew-Free AV UTP cable minimizes pair skew to the point that equalization is not required.

Skew exists between pairs when the physical length of one wire pair is different from another. As the transmission cable length increases, the amount of skew increases. Skew affects the displayed image when the differential length between wire pairs exceeds two feet, causing the timing of the red, green, and blue video signals to appear out of alignment (horizontal registration errors). A white vertical line on a black field can appear as individual red, green, and blue lines that are close together; the signal transmitted on the shortest wire pair leads the other colors and appears to the left on the display.

UTP cable test equipment measures and reports wire pair length. The report on the various pair lengths can be used in equalizing pair skew. The nominal velocity of propagation (NVP — the speed at which the signal travels on the transmission line, measured as a percentage of the speed of light) of TP cable is very close to that of conventional coaxial cable. The difference in NVP means that an additional length of coaxial cable equal to the length of pair skew, placed on the receiver's output, equalizes the effects of pair skew.

CAT 5 TP cable can lead to registration errors between the red, green, and blue video signals. Pair skew can be measured with test equipment or identified by viewing a crosshatch test pattern closely to determine if either the red, green, or blue video image leads (appears to the left of) the other two video images. These images can be minimized or eliminated by one of the following methods:

- Switch to the Extron Enhanced Skew-Free AV UTP cable.
- Add a skew compensation cable equal to the length of pair skew to the output of the receiver.
- Install an Extron Skew Equalizer, SEQ 100 15HD (part number: 60-676-01), on the video output of the receiver and adjust the skew for the leading video image.

Sharpness Adjustment

The longer the cable being used, the greater the signal loss. The image sharpness may be enhanced by turning a peaking adjustment screw located on the top of the receiver. Increased peaking can compensate for detail (mid- and high-frequency) loss from low bandwidth system components or capacitance in long cables. Adjust this control using the included adjustment tool while viewing the displayed image to obtain the optimum picture sharpness. Turning the control clockwise increases peaking and turning it counterclockwise decreases peaking.


Sharpness
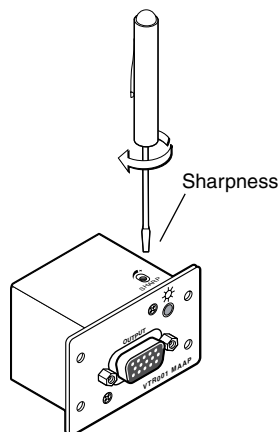
Mounting

The mountable transmitter (VTT001 MAAP) and mountable receiver (VTR001 MAAP) may be attached to a wall with either a stud-mounted wall box or with an MR Series modular mud ring (Extron part number: 70-519-xx). Both installations require the double spaced MAAP connector frame, such as the CPM101). The transmitter/receiver module can also be attached to any Extron MAAP device that accepts a double spaced AV connector panel, or the modules may be rack mounted. The AAP version of the receiver mounts to Extron AAP frames (see **Other Accessories** on page 18).

Preparing the Wall Box

For wall and furniture mounting installations, the installation site must be deep enough for both the wall box and the cables. The box should be at least 2.5 inches (6.4 cm) deep. Install cables into the wall, furniture, or conduits before installing a wall box or bracket.

1. Place the wall box or mounting bracket against the installation surface, and mark the guidelines for the opening on the wall or furniture.

2. Cut out the material from the marked area.

3. Insert the wall box or bracket to check the size and fit of the opening. Enlarge or smooth the edges of the opening if needed.

4. If using a wall box, feed cables through the punch-out holes on the wall box, and secure them with cable clamps to provide strain relief.

5. Exposed cable shields (braids or foil) are potential sources of short circuits. Trim back and insulate shields with heat shrink.
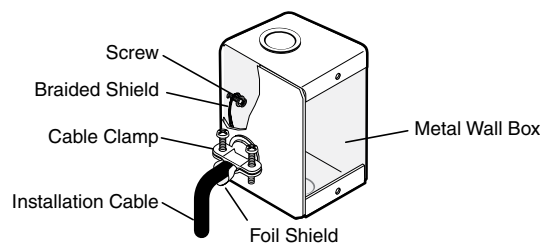
Figure 6.   Grounding Outer Braided and Foil Shields

CAUTION: To prevent short circuits, the outer foil shield can be cut back to the point where the cable exits the cable clamp. Both braided and foil shields should be connected to an equipment ground at the other end of the cable.

6. Insert the wall box or wall bracket into the opening, and attach it to the wall, stud, or furniture, leaving the front edge flush with the outer wall or furniture surface.
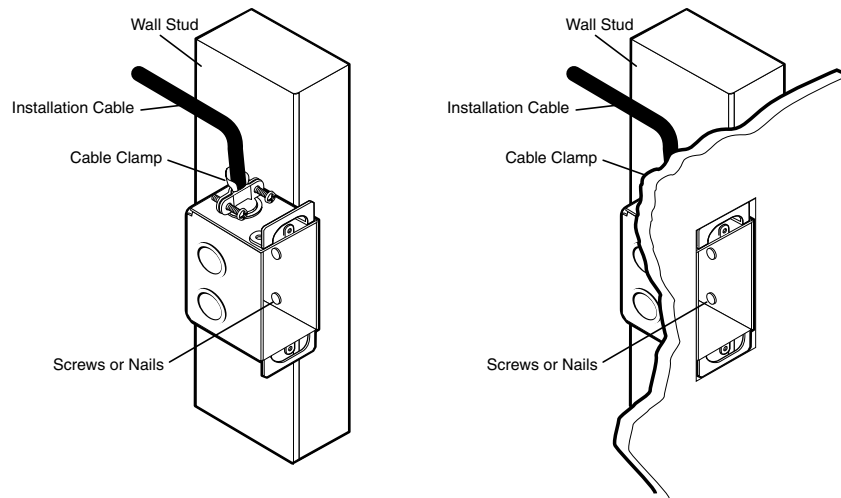
Figure 7.   Attaching a Wall Box to a Wall Stud

- To attach a wall box to wood, use four #8 or #10 screws or 10-penny nails. A minimum of 0.5 inch (1.3 cm) of screw threads must penetrate the wood.

- To attach a wall box to metal, use four #8 or #10 self-tapping sheet metal screws or machine bolts with matching nuts.

7. Mount the modules onto a faceplate or frame, then cable and test the transmitter/receiver modules before fastening it into the wall box or bracket. The cables are inaccessible after installation.

Wall box mounting

1. Attach the transmitter/receiver modules to the mounting frame with the included #4-40 screws.

2. Attach all power and video cables to the rear of the transmitter/receiver. Power on the transmitter/receiver now if the external power supply cannot be accessed once the transmitter/receiver is mounted.

3. Attach the mounting frame (with the attached transmitter/receiver modules) to the wall box, using the two included mounting screws.
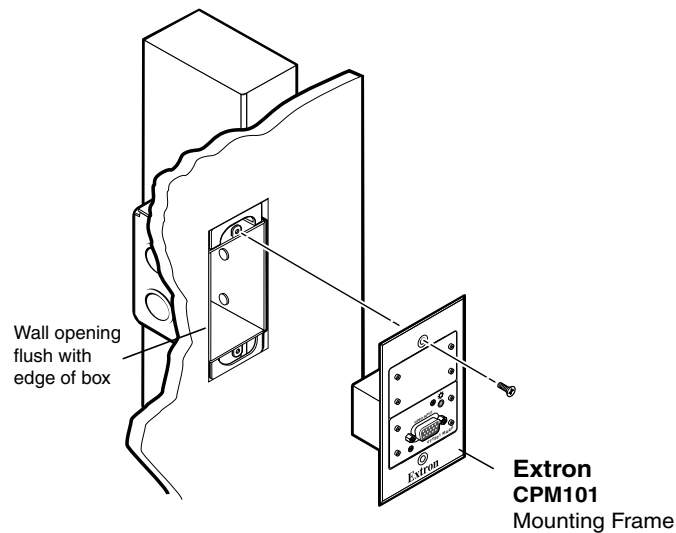
Figure 8.   Attaching the Mounting Frame to the Wall Box

4. Connect the video input and output devices to the front faceplates of the transmitter and receiver, respectively.

5. Power on all devices.

Wall bracket mounting

1. Attach the transmitter/receiver modules to the mounting frame with the included #4-40 screws.

2. Attach all power and video cables to the rear of the transmitter/receiver. Power on the transmitter/receiver now if the external power supply cannot be accessed once the transmitter/receiver is mounted.

3. Attach the mounting frame (with the attached transmitter/receiver modules) to the mounting bracket using the two included mounting screws.
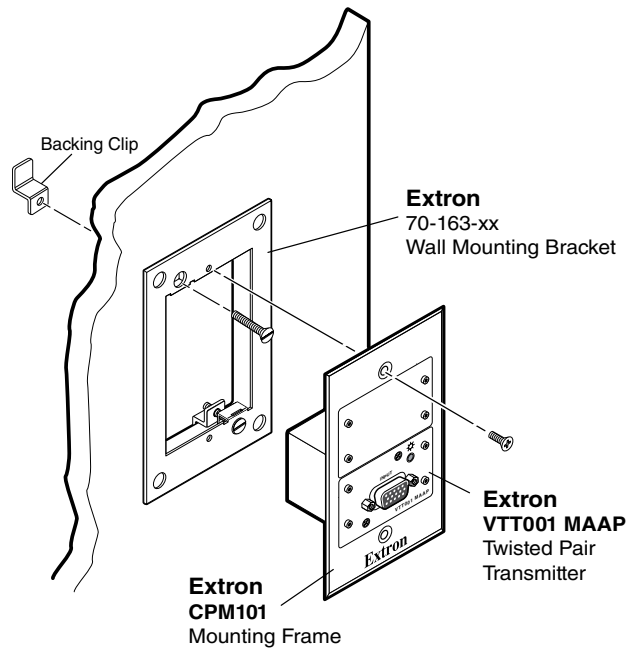

Figure 9.   **Attaching the Mounting Frame to the Wall Mounting Bracket**

4. Attach the video input and output devices to the front faceplates of the transmitter and receiver, respectively.

5. Power on all devices.

AAP mounting

The VTR001 AAP version is mounted to the Extron AAP panel by inserting the two AAP studs through the panel mounting holes and attaching the nuts, as shown below.
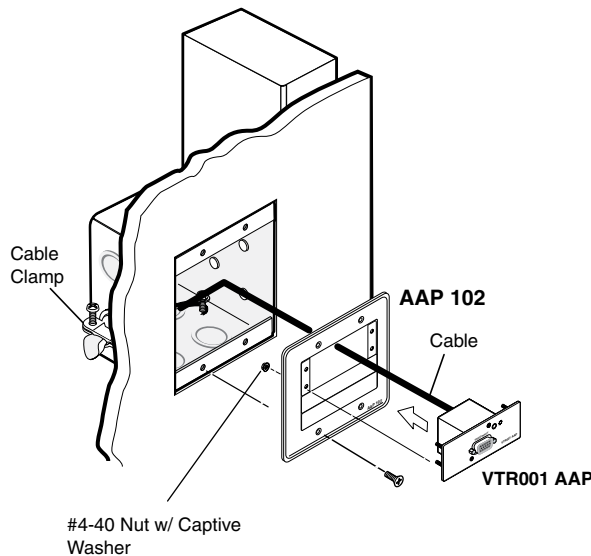
Figure 10.   Attaching a VTR001 AAP to an Extron AAP Frame

Rack mounting

UL rack mounting guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the device in a rack.

1. **Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the unit in an environment compatible with the maximum ambient temperature (Tma = +122 °F, +50 °C) specified by Extron.

2. **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.

3. **Mechanical loading** — Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.

4. **Circuit overloading** — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

5. **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (that is, use of power strips).

Rack mounting instructions

Various 1U rack space frames accommodate the VTT001 MAAP, VTR001 MAAP, and VTR001 AAP modules. The CPM133 is a one-third rack width frame that can be mounted to the IN9080 rack mount shelf. The CPM112R, as shown below, is a full rack width frame that holds six double sized modules.

Depending on the AV connector frame used, the transmitters/receivers may be mounted to the rack with or without the rack mount shelf.

1. For mounting without a rack mount shelf, mount the transmitter/receiver modules to the AV connector frame, then attach the frame directly to the rack.

CPM112R
AV Connector Frame

(4) #4 - 40
Screws
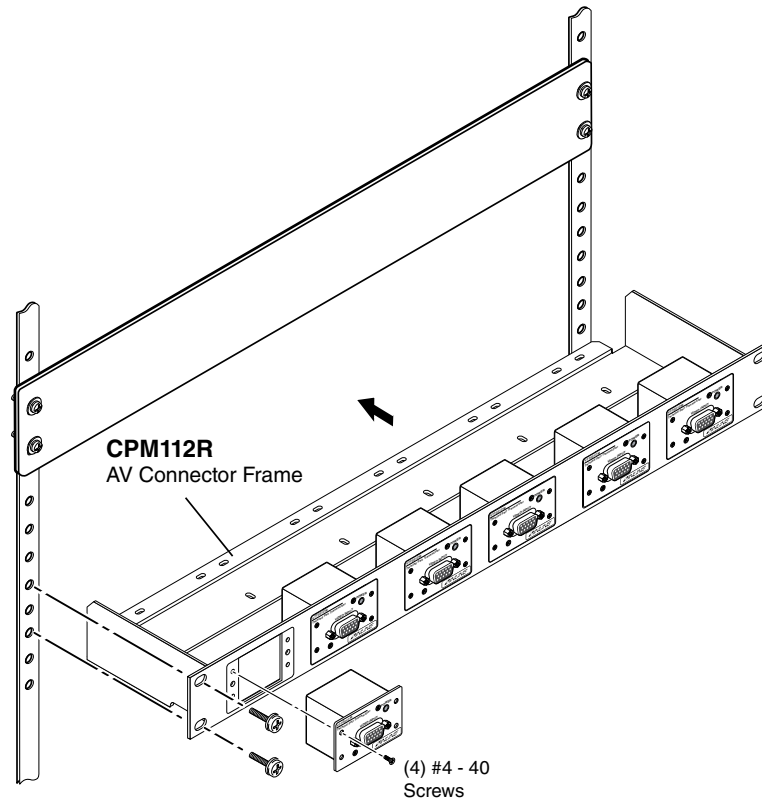
Figure 11.   CPM112R AV Connector Frame Mounted Directly to a Rack

For mounting the VTT001 MAAP or VTR001 MAAP to a rack mount shelf, mount the transmitter/receiver modules to the AV connector frame, then attach the frame to the shelf, as shown below.
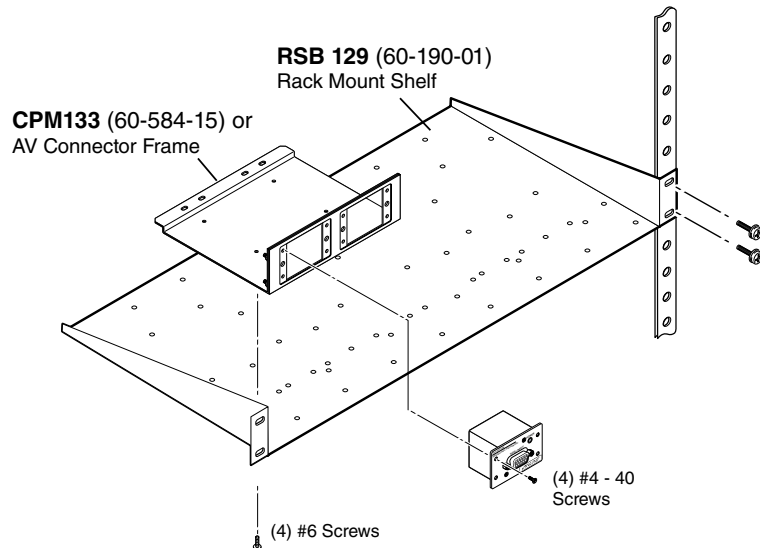
Figure 12. **CPM133 AV Connector Frame Mounted to a Rack Shelf**

For mounting the VTR001 AAP to a rack, mount the AAP modules to the Extron AAP frame, then attach the frame to the rack, as shown below.
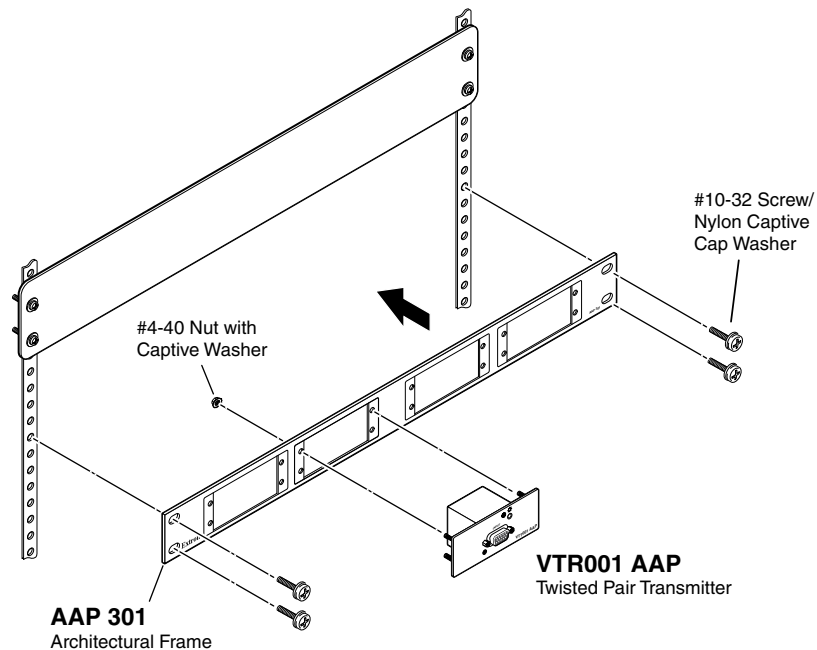
Figure 13. **Extron AAP 301 Frame Mounted Directly to a Rack**

2. Attach all power and video cables to the rear of the transmitter/receiver. Power on the transmitter/receiver now if the external power supply cannot be accessed once the transmitter/receiver is mounted.

3. Attach the video input and output devices to the front faceplates of the transmitter and receiver, respectively. Power on all devices.

Reference Information

Parts List

VTT001 MAAP and VTR001 MAAP

Description	Part Number
VTT001 MAAP wall mount transmitter - black	70-284-11
VTR001 MAAP wall mount receiver - black	70-285-11
NOTE: The MAAP models mount into MAAP (mini AAP) panels.	

VTT001 and VTR001 Tabletop

Description	Part Number
VTT001 tabletop transmitter - black	60-581-01
VTR001 tabletop receiver - black	60-582-01

VTR001 AAP

Description	Part Number
VTR001 AAP (white)	70-259-21
NOTE: The VTR001 AAP device can be mounted in the Extron AAP panels listed under "**Other Accessories**."	

Included Parts

Description	Part Number
Power supply: universal, 12 VDC, 1.0 A	
Sharpness adjustment tool	
VTT001 and VTR001 Setup Guide	

Skew-Free™ AV UTP Cables

Description	Part Number
UTP23SF-4/1000 1000' bulk (non-plenum)	22-141-03
UTP23SF-4P/1000 1000' bulk (plenum)	22-142-03
UTP23SF-4/12 12' preterm. (non-plenum)	26-569-03
UTP23SF-4/25 25' preterm. (non-plenum)	26-569-04
UTP23SF-4/50 50' preterm. (non-plenum)	26-569-06
NOTE: Other cable lengths are available.	

Other Accessories

Description	Part Number
CPM101 MAAP plate, one-gang (black, white)	60-583-11, -21
CPM112R MAAP rack-mount connector panel	60-584-12
CPM133 one-third rack width panel	60-584-15
RSU 129 rack mount shelf	60-190-01
RSB 129 9.5" deep basic rack shelf	60-604-02
AAP 102 frame (black)	60-300-02
AAP 102 frame (white)	60-300-03
AAP 104 frame (black)	60-301-02
AAP 104 frame (white)	60-301-03
AAP 106 frame (black)	60-531-02
AAP 201 frame - half rack width, 1U (black)	60-302-02
AAP 301 frame - full rack width, 1U (black)	60-632-02
AAP 302 frame - full rack width, 1U (black)	60-633-02

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

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Anaheim, CA 92805
U.S.A.

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The Netherlands

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China

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> **NOTE:** If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.
>
> | | | | |
> |---|---|---|---|
> | **USA**: | 714.491.1500 or 800.633.9876 | **Europe**: | 31.33.453.4040 |
> | **Asia**: | 65.6383.4400 | **Japan**: | 81.3.3511.7655 |

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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